

In re LI ET AL., Application No. 09/864,101  
Amendment A

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method for collecting statistics at multiple collection rates, the method comprising:

establishing a plurality of statistics collection pools for a range of statistics collection rates, each of the plurality of statistics collection pools having a different statistics collection rate;

assigning a connection to a particular one of the plurality of statistics collection pools;  
and

collecting statistics data for the connection at approximately the statistics collection rate of said particular one of the plurality of statistics collection pools.

Claim 2 (currently amended): The method of claim 1, wherein the statistics connection is assigned to the particular one of the plurality of connection pools based at least in part on a statistics collection overflow rate for a collected characteristic of the connection.

Claim 3 (currently amended): The method of claim 2, wherein the statistics collection rate of said particular one of the plurality of statistics collection pools equals or exceeds the statistics collection overflow rate for the collected characteristic of the connection.

Claim 4 (currently amended): The method of claim 1, wherein said collected statistics data includes at least one packet statistic.

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Claim 5 (currently amended): A computer-readable medium containing computer-executable instructions for performing ~~the method of claim 4~~ steps for collecting statistics at multiple collection rates, said steps comprising:

establishing a plurality of statistics collection pools for a range of statistics collection rates, each of the plurality of statistics collection pools having a different statistics collection rate;

assigning a connection to a particular one of the plurality of statistics collection pools;  
and

collecting statistics data for the connection at approximately the statistics collection rate of said particular one of the plurality of statistics collection pools.

Claim 6 (currently amended): A method for collecting statistics at multiple collection rates, the method comprising:

determining a statistics data acquisition rate for each connection of a plurality of connections;

configuring a plurality of predefined statistics collection groups, each said predefined statistics collection group having a different predetermined statistics collection rate;

assigning said each connection to one of the plurality of predefined statistics collection groups based at least in part on the statistics data acquisition rate for said each connection; and

collecting statistics data for said each connection according to its said assigned predefined statistics collection group at approximately said corresponding predetermined statistics collection rate.

Claim 7 (currently amended): The method of claim 6, wherein said predetermined statistics collection rate for a particular predefined statistics collection group exceeds a statistics collection data overflow rate for each of the connections assigned to said particular predefined statistics collection group.

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Claim 8 (original): The method of claim 7, wherein a packet statistic is maintained for said each connection.

Claim 9 (original): A computer-readable medium containing computer-executable instructions for performing ~~the method of claim 6~~ steps for collecting statistics at multiple collection rates, said steps comprising:

determining a statistics data acquisition rate for each connection of a plurality of connections;

configuring a plurality of predefined statistics collection groups, each said predefined statistics collection group having a different predetermined statistics collection rate;

assigning said each connection to one of the plurality of predefined statistics collection groups based at least in part on the statistics data acquisition rate for said each connection; and

collecting statistics data for said each connection according to its said assigned predefined statistics collection group at approximately said corresponding predetermined statistics collection rate.

Claim 10 (original): An apparatus comprising:

a plurality of elements, each of the plurality of elements maintaining a different packet statistic count and having a required minimum collection rate;

one or more storage elements for storing a data structure indicating an assignment of each of the plurality of elements to one of a plurality of collection groups each having a different collection rate, wherein a particular collection rate of a particular collection group exceeds the minimum collection rates of any of the plurality of elements assigned to the particular collection group; and

a collector to acquire data from the plurality of elements according to said different collection rates of the plurality of collection groups.

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Claim 11 (original): The apparatus of claim 10, wherein the different packet statistic count maintained by each of the plurality of elements corresponds to one or more connections.

Claim 12 (original): The apparatus of claim 10, wherein each of the plurality of elements includes a counting mechanism.

Claim 13 (original): The apparatus of claim 10, further comprising a packet processor coupled to each of the plurality of elements and to initiation modification of said data in the plurality of elements.

Claim 14 (original): The apparatus of claim 13, wherein each of the plurality of elements includes a counting mechanism.

Claim 15 (original): A packet switching component including the apparatus of claim 10.

Claim 16 (original): The apparatus of claim 10, wherein the data structure includes a plurality of identifiers, each of the plurality of identifiers corresponds to a different one of the plurality of elements.

Claim 17 (original): The apparatus of claim 16, wherein the data structure includes at least one linked list of a group of the plurality of identifiers assigned to one of the plurality of collection groups.

Claim 18 (original): The apparatus of claim 10, wherein the collector includes a second data structure to maintain indications of said data acquired from the plurality of elements.

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Claim 19 (original): An apparatus comprising:

a plurality of means for maintaining a packet statistic, the plurality of means for maintaining the packet statistic having at least two different minimum collection rates;  
means for acquiring data at a plurality of different collection rates from the plurality of means for maintaining the packet statistic; and  
means for relating each of the plurality of means for maintaining the packet statistic to one of the plurality of collection rates.

Claim 20 (currently amended): An apparatus for collecting statistics at multiple collection rates, the apparatus comprising:

means for establishing a plurality of statistics collection pools for a range of statistics collection rates, each of the plurality of statistics collection pools having a different statistics collection rate;  
means for collecting statistics data from a plurality of means for storing statistics data;  
means for assigning a particular means for storing statistics data to a particular one of the plurality of statistics collection pools based at least in part on ~~an~~ a statistics overflow rate for the means for storing statistics data; and  
means for collecting statistics data from the plurality of means for storing statistics data at approximately said statistics collection rates of the plurality of statistics collection pools.

Claim 21 (currently amended): The apparatus of claim 20, wherein the statistics collection rate of each of the plurality of statistics collection pools equals or exceeds the statistics overflow rate for each particular means for storing statistics data assigned to said each of the plurality of statistics collection pools.

Claim 22 (currently amended): The apparatus of claim 21, wherein each of the plurality of means for storing statistics data maintains at least one packet statistic.

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Claim 23 (currently amended): An apparatus for collecting statistics at multiple collection rates, the apparatus comprising:

means for determining a statistics data acquisition rate for each element of a plurality of elements;

means for configuring a plurality of predefined statistics collection groups, each of said predefined collection group having a different predetermined statistics collection rate;

means for assigning said each element to one of the plurality of predefined statistics collection groups based at least in part on the statistics data acquisition rate for said each element; and

means for collecting statistics data from said each element according to its assigned predefined statistics collection group at approximately said corresponding predetermined statistics collection rate.

Claim 24 (currently amended): The apparatus of claim 23, wherein said predetermined statistics collection rate for a particular predefined collection group exceeds a statistics data overflow rate for each of the elements assigned to said particular predefined statistics collection group.

Claim 25 (original): The apparatus of claim 24, wherein each element maintains at least one packet statistic.

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Claim 26 (currently amended): An apparatus for collecting statistics at multiple collection rates, the apparatus comprising:

means for establishing a plurality of statistics collection pools for a range of collection rates, each of the plurality of statistics collection pools having a different statistics collection rate;

means for assigning a connection to a particular one of the plurality of statistics collection pools; and

means for collecting statistics data for the connection at approximately the statistics collection rate of said particular one of the plurality of statistics collection pools.

Claim 27 (currently amended): The apparatus of claim 26, wherein the statistics connection is assigned to the particular one of the plurality of statistics connection pools based at least in part on an a statistics overflow rate for a collected statistics characteristic of the connection.

Claim 28 (currently amended): The apparatus of claim 27, wherein the statistics collection rate of said particular one of the plurality of statistics collection pools equals or exceeds the statistics overflow rate for the collected statistics characteristic of the connection.

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Claim 29 (currently amended): An apparatus for collecting statistics at multiple collection rates, the apparatus comprising:

means for determining a statistics data acquisition rate for each connection of a plurality of connections;

means for configuring a plurality of predefined statistics collection groups, each of said predefined statistics collection group having a different predetermined statistics collection rate;

means for assigning said each connection to one of the plurality of predefined statistics collection groups based at least in part on the statistics data acquisition rate for said each connection; and

means for collecting statistics data for said each connection according to its assigned predefined statistics collection group at approximately said corresponding predetermined statistics collection rate.

Claim 30 (currently amended): The apparatus of claim 29, wherein said predetermined collection rate for a particular predefined statistics collection group exceeds a statistics collection data overflow rate for each of the connections assigned to said particular predefined statistics collection group.